Collaborative Authoring of Open Courseware with SlideWiki: A Case Study in Open Education

Conference or Workshop Item

COLLABORATIVE AUTHORING OF OPEN COURSEWARE WITH SLIDEWIKI: A CASE STUDY IN OPEN EDUCATION

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Abstract

Producing or finding and reusing high-quality educational content online can be a laborious and costly process. With the open-source and open-access SlideWiki platform, the effort of producing and reusing highly-structured remixable educational content can be crowdsourced and therefore widely shared. SlideWiki employs crowdsourcing methods in order to support the open education community in authoring, sharing, reusing and remixing open courseware. This paper presents a case study of this platform carried out in the context of open education and informal learning and reports on the feedback received thus far from members of the open education community.

Keywords: collaborative authoring, sharing, reusing, remixing, crowdsourcing, open educational resources, open education.

1 INTRODUCTION

The SlideWiki project[1] is a European initiative, creating a platform that facilitates large-scale collaboration around educational content. Since its launch [1], the SlideWiki platform[2] has grown its user base to hundreds of educators and thousands of learners and has won the OpenCourseWare Consortium's Excellence Award. Several hundred comprehensive open learning materials are currently available on the SlideWiki platform in different languages.

SlideWiki is fostering open education by supporting the authoring and sharing of Open Educational Resources (OERs). OERs can be described as "teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or repurposing by others depending on which Creative Commons license is used" [2]. The emergence of OERs has greatly facilitated online education through the use and sharing of open and reusable learning resources on the Web. Learners and educators can now access, download, remix, and republish a wide variety of quality learning materials [3, 4].

The SlideWiki project is building upon and promoting the OER initiative by introducing the SlideWiki platform to different communities of educators and learners. The SlideWiki project is performing a wide range of trials covering different levels of education (i.e. from secondary to higher education) and different types of learning (i.e. formal learning, informal learning, vocational learning). Each of these large-scale trials is carried out with hundreds of educators and thousands of learners in different countries across Europe.

A particular focus of these trials is the authoring of OERs and their delivery via various educational platforms that address different learning contexts. More specifically, SlideWiki aims at delivering learning resources via the following educational platforms:

- Massive Open Online Courses (MOOCs)
- Learning Management Systems (LMSs)
- Interactive eBooks
- Social networks

This paper describes the use of the SlideWiki platform for the production and delivery of OERs for informal learners, as well as the community feedback received so far in the context of this trial from engaging different open education audiences via a series of dedicated hands-on workshops. The remainder of this paper is organised as follows. First, we introduce the SlideWiki platform and its functionalities for supporting the collaborative authoring and reuse of educational content. We then

[1] https://slidewiki.eu

[2] https://slidewiki.org

present the case study conducted in the context of open education, followed by the evaluation of the platform carried out within this case study. Finally, the paper is concluded and the next steps of this work are outlined.

2 AUTHORING AND REUSING CONTENT IN SLIDEWIKI

The SlideWiki platform allows the creation of educational content either by individual authors or collaboratively by groups of authors. Additionally, learners can interact with the offered content in various ways, such as via commenting, answering quizzes, as well as by reusing and adapting the content according to their needs. Authors can either upload existing content to the platform in the form of a PowerPoint or OpenOffice presentation, or start creating a slide deck from scratch. They can assign editing permissions to co-authors, who can then start editing their content using a WYSIWYG (what you see is what you get) HTML editor, or by editing the HTML code directly. The editing features available in SlideWiki include the ability to embed images, video, tables, mathematical equations, as well as code snippets. Figure 1 shows the editing interface of slides. The export options available for content in SlideWiki are shown in Figure 2 and include common formats and standard specifications, such as HTML, PDF, ePUB and SCORM.

Slides in SlideWiki can be organised into decks and subdecks, thus forming the tree structure shown in Figure 3a. On the right-hand side of a slide deck, the activity feed of the deck is displayed, which shows the most recent changes to the content, as well as how this content is being used by other users in their decks (see Figure 3b). Finally, the pane below a slide deck displays different types of detailed information about the educational content. This information is organised into a series of tabs (see Figure 4) and includes the sources of content, tags associated with the content, comments from users, history of the content, as well as where else the content is being used within the platform. Authors may also create quizzes for their slides, consisting of multiple-choice questions.

All content on the platform is published under a Creative Commons Attribution-ShareAlike 4.0 International License,[3] which allows it to be reused, repurposed and republished. In order to reuse a deck or a sub-deck, one can 'fork' it thus creating a copy of the content that can be further adapted by the user that forked it. All changes made to content are tracked by the platform and displayed in the history tab of the content. Authors can track how their content is being reused and repurposed within the platform via the activity feed and the usage tab of their content.

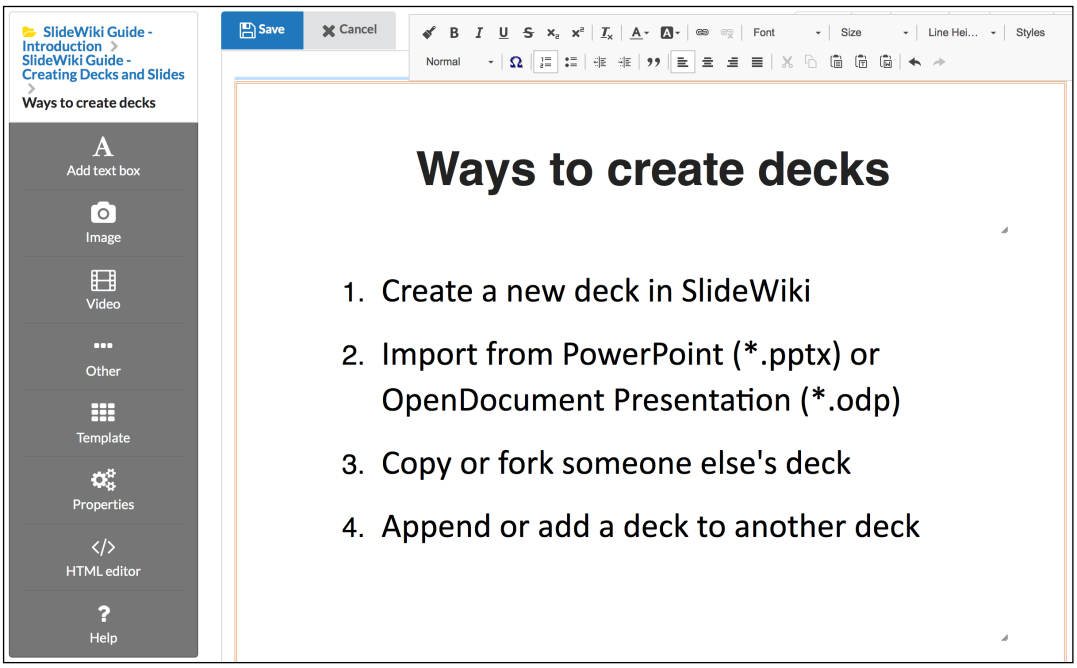


Figure 1: The SlideWiki content editing interface.

[3] http://creativecommons.org/licenses/by-sa/4.0/

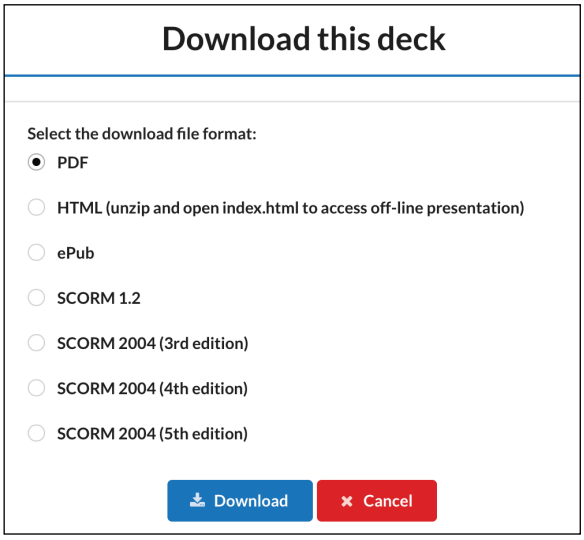
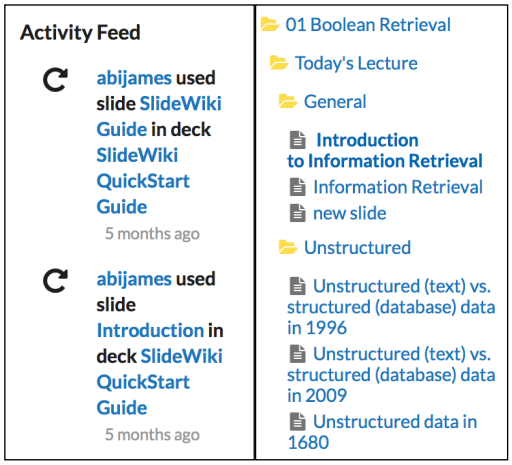


Figure 2: Content export options in SlideWiki.



(a) (b)

Figure 3: The SlideWiki activity feed (a) and slide deck tree structure (b).

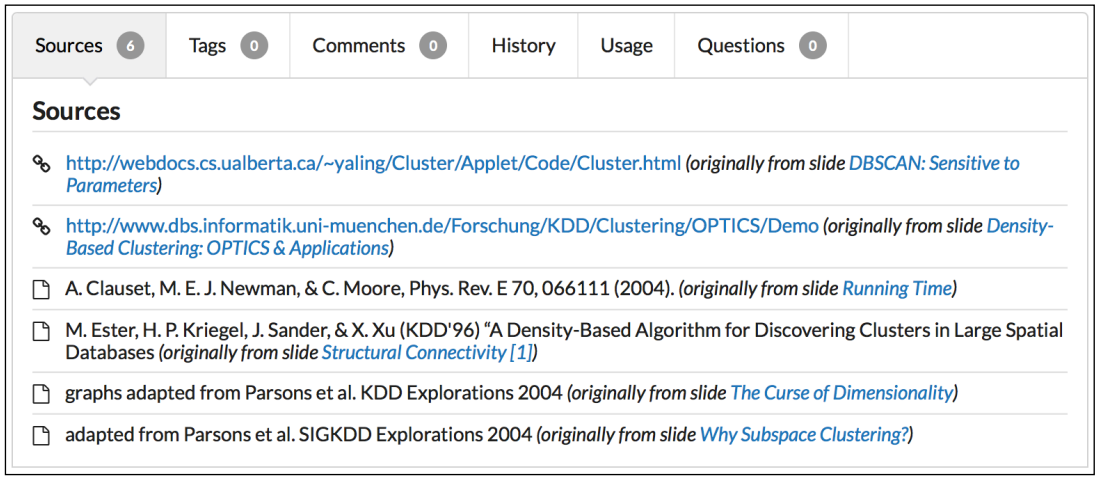


Figure 4: Attributing sources of content in SlideWiki.

3 THE OPENLEARN CASE STUDY

The case study presented in this paper is focused on open education and relates to the use of, as well as outputs of the OpenLearn project [5], an OER repository owned by the Open University (OU).[4] OpenLearn offers in excess of 15,000 hours of self-study materials and receives an average of 5 million visitors per year. All OpenLearn content is completely free and accessible via any web browser. OpenLearn courses are badged, meaning that learners who complete them receive a badge that demonstrates their achievement and can be shared on social media and displayed in LinkedIn or other ePortfolio platforms.

The OpenLearn self-study materials are offered in a variety of formats. These include study materials repurposed as OERs from original OU courses, i.e. initially designed for formal delivery, as well as new bespoke OERs created by both OpenLearn academics and other non-OU educators. In other words, further facilitating OERs available for informal delivery. As the majority of the study materials presented on the OpenLearn platform are made available using a Creative Commons licence, it is possible not only to reuse selected information but also to author new OER materials for the SlideWiki project, which can be freely shared to a worldwide audience.

OpenLearn Create[5] is part of the OpenLearn project and offers an open and free platform where individuals and organisations can publish their open content, courses and resources. OpenLearn Create is based on the open-source Moodle platform and offers tools for collaboration, reuse and remixing of learning resources. It also supports Open Badges [6] that are awarded to learners that complete a course on the platform.

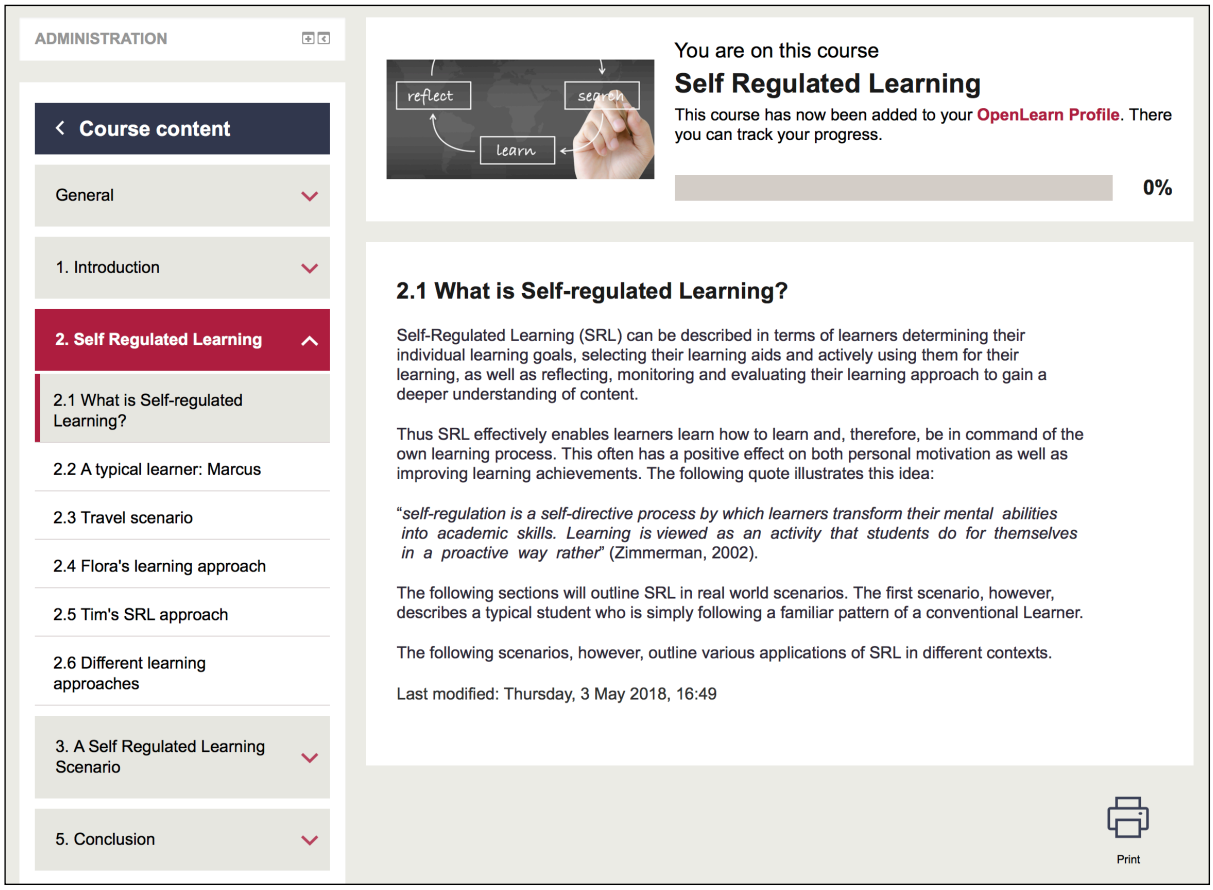


Figure 5: Extract from the Self-Regulated Learning OERs available in OpenLearn Create. [6]

[4] http://www.open.edu/openlearn
[5] http://www.open.edu/openlearncreate/
[6] http://www.open.edu/openlearncreate/course/view.php?id=1490

In the context of this case study, we have used SlideWiki in order to author OERs for delivery via OpenLearn Create. In particular, we have reused and enriched OERs previously created for a case study investigating the use of personal learning environments for self-regulated learning [7, 8]. The resulting OERs are therefore focused on the topic of self-regulated learning and provide an introduction to the pedagogies and technologies that empower self-regulated learning (see Figure 5). A selection of tools that will help learners build their personal learning environment and become self-regulated are also demonstrated within these OERs. Learners have an opportunity to try these tools through a set of interactive learning activities.

The OERs have been authored by a team of researchers in the field of self-regulated learning and personal learning environments. They are primarily targeted to informal learners and are available for free for anyone who wishes to understand what self-regulated learning is and how they can become self-regulated learners. The OERs are offered as self-study materials that informal learners can study at their own time and pace. The OERs are also available in the form of an interactive eBook available to download for free from iTunes.[7]

4 EVALUATION

In this section, we describe the evaluation of the SlideWiki platform conducted in the context of the OpenLearn case study. Within this case study, feedback about the platform was collected by members of the open education community. For the purposes of collecting qualitative and quantitative feedback from participants of the SlideWiki evaluation, a survey[8] measuring the usability and usefulness of the platform has been developed jointly by partners of the SlideWiki project. This survey is being used by all trials currently being conducted by the project across different case studies and learning contexts.

Evaluation activities specifically within the OpenLearn case study were initially focused on producing learning content on SlideWiki after the Beta Version of the platform was released in October 2016. Following the release of the Beta Version, a representative from the authoring team of the OpenLearn OERs registered an account in the platform and started producing content related to the self-regulated learning OERs.

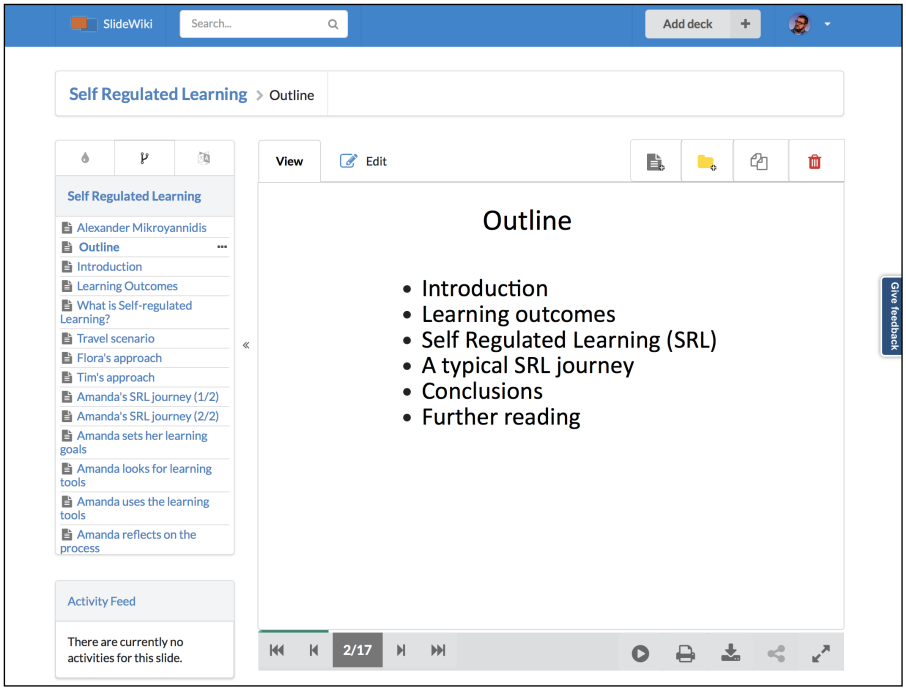


Figure 6: Screenshot of a Self-Regulated Learning slide deck on the Beta SlideWiki platform.[9]

[7] https://itunes.apple.com/book/self-regulated-learning/id783650765
[8] https://goo.gl/forms/lxSyvxZOPQQyxWDh1
[9] http://stable.slidewiki.org/deck/9233

The produced content consists of slide decks that are targeted to informal learners, who may be interested in studying the OpenLearn OERs. The slide decks offer a brief overview of the OERs, so that potential learners acquire an understanding of the content of the OERs and the associated learning goals (see Figure 6). In order to produce these slide decks, two existing PowerPoint presentations were imported into SlideWiki and were edited afterwards. Additionally, a new slide deck with sub-decks was created from scratch in SlideWiki. The evaluation was conducted by the representative of the authoring team who produced the content in SlideWiki. The evaluator took notes of the pros and cons of the platform during the production of content in SlideWiki and then completed the online usability and usefulness survey.

This initial evaluation was followed by a series of face-to-face hands-on workshops, which targeted different audiences in the context of international conferences on open education and educational technology. This workshop series has been delivered so far to:

- The Open Education Global conference (OE Global 2017), 8-10 March 2017, Cape Town, South Africa.
- The Open Educational Resources conference (OER17), 5-6 April 2017, London, UK.
- The 20th International Conference on Interactive Collaborative Learning (ICL 2017), 27-29 September 2017, Budapest, Hungary.
- The 13th Joint European Summer School on Technology Enhanced Learning (JTELSS 2017), 9-13 October 2017, Aveiro, Portugal.
- The OEB (Online Educa Berlin) Global conference, 6-8 December 2017, Berlin, Germany.
- The Open Education Global conference (OE Global 2018), 24-26 April 2018, Delft, the Netherlands.

Figure 7: Snapshots from the various workshops delivered to members of the open education community.

Participants in these workshops have been lecturers, researchers, technologists and professionals from the educational sector. During the workshops, participants were introduced to the SlideWiki platform and its functionalities for collaborative authoring of OERs. Participants were also introduced to the latest technological developments behind SlideWiki, regarding its integration with different educational platforms. Additionally, participants had the opportunity to try the SlideWiki platform and perform a range of OER-related tasks, including finding OERs, reusing existing OERs, as well as authoring new OERs in collaboration with other participants. Participants were able to offer their feedback via discussions and by completing a printed version of the SlideWiki evaluation survey.

The participants of the workshops generally appreciated the capabilities of the SlideWiki platform in supporting the full lifecycle of OERs, as well as the collaborative features of the platform. Some

participants indicated that they would like to be able to invite their colleagues to collaborate on the platform via automated email invitations. Some participants suggested improving the import function of existing educational content, in order to minimise the effort required by authors of content. Some participants also encountered usability issues with the content editing interface of the platform, as well as performance issues with the platform, such as long response times. These issues have been reported back to the community of SlideWiki developers, so that the platform is further improved and aligned to the recommendations from the open education community.

On top of collecting valuable feedback about the SlideWiki platform itself, this workshop series has offered numerous opportunities for raising awareness about technologies that facilitate OER production and sharing. Additionally, interactions with the participants of these workshops have allowed us to acquire an in-depth insight into the various challenges faced by producers of OERs, as well as by those that wish to find, reuse and adapt educational content online. It has become apparent from this study that there is still considerable room for improvement in the ways educational content is created and published online, as this can be a tedious, time-consuming and expensive process. Similar challenges apply to the discoverability, reusability and openness of learning materials, as content creators still face considerable difficulties in finding suitable and high-quality OERs that they can reuse and repurpose in a cost-efficient way. All these challenges offer several opportunities to the SlideWiki project towards addressing the needs of the open education community by supporting the openness of educational content and fostering its collaborative authoring.

5 CONCLUSIONS

The SlideWiki platform builds on the wisdom, creativity and productivity of the crowd for the co-creation of educational content. SlideWiki empowers communities of educators to author, share and re-use educational content in a collaborative way. With SlideWiki, we aim to make educational content more accessible, interactive, engaging and qualitative. The SlideWiki project is improving the platform and conducting a number of trials and evaluations of the platform within different case studies and learning contexts. One of these case studies is focused on open education and concerns the use of SlideWiki for authoring OERs for informal learning.

The evaluation conducted within the OpenLearn case study aims at engaging members of the open education community, in order to raise awareness and collect feedback about the SlideWiki platform. A number of issues have been identified so far for further improving the user experience offered by SlideWiki. These issues have been reported back to the community of SlideWiki developers, so that the platform is improved in time for the next round of trials, which will attract a larger number of users to the platform. These trials will contribute to the growth of SlideWiki's user base, which will allow us to collect more in-depth and diverse feedback about the usability and usefulness of the platform, as well as establish a sustainable community of users of the platform beyond the lifetime of the project.

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REFERENCES

[1] S. Auer, A. Khalili, and D. Tarasowa, "Crowd-sourced Open Courseware Authoring with SlideWiki. org," *International Journal of Emerging Technologies in Learning (iJET)*, vol. 8, pp. 62-63, 2013.

[2] D. E. Atkins, J. S. Brown, and A. L. Hammond, "A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and New Opportunities," The William and Flora Hewlett Foundation 2007.

[3] A. Lane, T. Connolly, G. Ferreira, P. McAndrew, and T. Wilson, "Reusing, reworking and remixing open educational resources," in *Cases 'n' Places: Global Cases in Educational and Performance Technology*, *Educational Design and Technology in the Knowledge Society*, S. Marshall and W. Kinuthia, Eds. Charlotte, NC: IAP - Information Age Publishing, 2010.

[4] T. Wilson, R. Schuwer, and P. McAndrew, "Collating global evidence of the design, use, reuse and redesign of open educational content," in *Open Educational Resources 2010 (OER10)*. Cambridge, United Kingdom http://oro.open.ac.uk/21122/, 2010.

[5] P. Law and A. Jelfs, "Ten years of open practice: a reflection on the impact of OpenLearn," *Open Praxis*, vol. 8, pp. 143-149, 2016.

[6] Mozilla Foundation, Peer 2 Peer University, and The MacArthur Foundation, "Open Badges for Lifelong Learning," https://wiki.mozilla.org/images/5/59/OpenBadges-Working-Paper_012312.pdf, 2010.

[7] A. Mikroyannidis, "Supporting Self-Regulated Learning within a Personal Learning Environment: The OpenLearn case study," in *Proc. International Workshop on Self-Regulated Learning in Responsive Open Learning Environments (SRL-ROLE 2011), 11th IEEE International Conference on Advanced Learning Technologies (ICALT 2011)*, Athens, Georgia, USA, 2011.

[8] A. Mikroyannidis and T. Connolly, "Introducing Personal Learning Environments to Informal Learners: Lessons Learned from the OpenLearn Case Study," in *Proc. PLE Conference*, Aveiro, Portugal, 2012.